CLAIMS

What is claimed is:

1. A posterior stabilized knee prosthetic system comprising:

a) a femoral component configured to be surgically implanted into a patient's femur, the femoral component having two condylar portions with a cam extending between the posterior end of the condylar portions, and the cam having a diffusion-hardened surface along a portion of the cam for adding strength and wear resistance to the contact zones of the cam;

b) a tibial component configured to be surgically implanted into a patient's tibia; and

c) a tibial insert having a proximal surface that is shaped to articulate against the femoral component, the insert having a distal surface that fits against the proximal surface of the tibial component, and the tibial component having a post for engaging the femoral component to provide posterior stabilization.

2. The prosthetic system of claim 1, wherein the diffusion-hardened surface is a thin coating of blue-black or black zirconium oxide.

3. The prosthetic system of claim 1, wherein the diffusion-hardened surface is a thin coating of oxidized metal selected from one or more metals from the group consisting of hafnium, zirconium, niobium and tantalum.

4. The prosthetic system of claim 2, wherein the condylar portions have a load bearing surface with a thin coating of a blue-black or black zirconium oxide.

5. The prosthetic system of claim 4, wherein the thickness of the zirconium oxide is greater than the thickness of the thickness of the zirconium oxide of the cam.

6. The prosthetic system of claim 3, wherein the femoral component has a pair of generally parallel vertical walls connected to the inner sides of the posterior condylar portions, wherein the vertical walls have an inner-side with a diffusion-hardened surface, wherein the diffusion-hardened surface is a thin coating of oxidized metal selected from one or more metals from the group consisting of hafnium, zirconium, niobium and tantalum.

7. The prosthetic system of claim 6, wherein the femoral component has a constrained box formed by an anterior wall connected to the pair of vertical walls, and a proximal wall connected to the pair of vertical walls, wherein the anterior wall is connected to or integrally formed with the cam, wherein the inner-side of the proximal anterior walls have a thin coating of oxidized metal selected from one or more metals from the group consisting of hafnium, zirconium, niobium and tantalum.

8. The prosthetic system of claim 3, wherein the tibial component is made from a polymeric bio-compatible material.

9. The prosthetic system of claim 8, wherein the polymeric bio-compatible is UHMWPE.

10. A prosthesis for implantation in a patient, comprising:

a prosthesis body for implantation in the body, the prosthesis body having one or more load bearing surfaces and one or more non-load bearing surfaces,

the load bearing surface on the prosthesis body being sized and shaped to engage or cooperate with a second load bearing surface on another prosthesis portion, said second load bearing surface being formed of an organic polymer or polymer-based composite,

the non-load bearing surface on the prosthesis body being sized and shaped to engage or cooperate with a second non-load bearing surface on another prosthesis portion, said second non-load bearing surface being formed of an organic polymer or polymer-based composite,

a diffusion-hardened coated surface on the bearing surface, and

a diffusion-hardened coated surface on the non-load bearing surface.

11. The prosthesis of claim 10, wherein the diffusion-hardened surface is a thin coating of blue-black or black zirconium oxide.

12. The prosthesis of claim 10, wherein the diffusion-hardened surface is a thin coating of oxidized metal selected from one or more metals from the group consisting of hafnium, zirconium, niobium and tantalum.

13. The prosthesis of claim 12, wherein the thickness of the coating of the diffusion-hardened surface of the load bearing surface is greater than the coating of the diffusion-hardened surface of the non-load bearing surface

14. The prosthesis of claim 10, wherein the prosthesis body has two condylar portions with a cam extending between the posterior of the condylar portions, the condylar portions having a load-bearing surface and the cam having a non-load bearing surface.

15. The prosthesis of claim 14, wherein the condylar portions are shaped to articulate against a tibial insert having a post for engaging the prosthesis body to provide posterior stabilization.

16. A posterior stabilized knee prosthetic comprising:

a femoral component configured to be surgically implanted into a patient's femur, the femoral component having two condylar portions with a cam extending between the posterior of the condylar portions, the cam having a having diffusion-hardened surface along a portion of its length for adding strength to the impact zones of the cam;

wherein the condylar portions are shaped to articulate against a tibial insert having a post for engaging the femoral component to provide posterior stabilization.

17. The posterior stabilized knee prosthetic of claim 16, wherein the diffusion-hardened surface is a thin coating of oxidized metal selected from one or more metals from the group consisting of hafnium, zirconium, niobium and tantalum.

18. The posterior stabilized knee prosthetic of claim 17, wherein the cam is shaped as a horizontal bar allowing femoral component rollback on the central post of the tibial insert.

19. The posterior stabilized knee prosthetic of claim 17, wherein the condylar portions have a load bearing surface with a thin coating of a blue-black or black zirconium oxide.

20. The prosthetic stabilized knee prosthetic of claim 17, wherein the femoral component has a constrained-box integrally formed with the cam, the constrained-box being connected to the posterior of the condylar portions, wherein the inner-sides of the constrained-box have a thin coating of oxidized metal selected from one or more metals from the group consisting of hafnium, zirconium, niobium and tantalum.